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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,461	03/29/2004	Hiroo Azuma	CFA00070US	3151

7590 12/05/2005

Canon U.S.A. Inc.  
Intellectual Property Department  
15975 Alton Parkway  
Irvine, CA 92618-3731

EXAMINER
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JACKSON JR, JEROME

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/812,461	<b>Applicant(s)</b> AZUMA, HIROO	
	<b>Examiner</b> Jerome Jackson Jr.	<b>Art Unit</b> 2815	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/14/05</u> . | 6) <input type="checkbox"/> Other: ____  |

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The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no description of exact structure enabling applicant's claimed invention. The theoretical nature of applicant's invention requiring entangled particles and measurement schemes including interaction free measurement have never been experimentally shown or proven to work and there is no exact description of exact devices and experimental evidence that this device has been built or ever could be built. Applicant references theoretical papers which predict certain quantum mechanical operations or structures, however, there is no proof that interaction free measurement could ever really occur in actual experiment and there is clearly no proof here that applicant has any enablement at all. Not only is this disclosure so vague and indefinite of exact device structure as there is no exact experimental setup shown or demonstrated and clearly no experimental results or actual measurements shown, it is clearly questionable whether this invention could ever actually be built and function as described. Following MPEP 2164.01 applicant is required to submit actual evidence of a working device as there is clearly a question of whether one of ordinary skill could make and use the invention without "undue experimentation". See MPEP 2164.01(a) listing

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factors to be regarded. In this application the nature of the invention (B) –theoretical-; the state of the prior art (C)-nonexistent or theoretical-; the amount of direction provided (F)-minimal as there are no exact structures and methods of making the needed structures shown-; the existence of working examples (G)-none-; and the quantity of experimentation needed (H)-extraordinary-; require that applicant submit evidence of a working device. It is also noted that the concept of “interaction free measurement” is a questionable concept that is basically theoretical and not universally agreed upon and in any event does not enable applicant's invention as there is no evidence here of any device capable of “interaction free measurement”.

It is also noted that the invention requires perfect mirrors and charged particles for certain embodiments whereas positrons and electrons will interact with the mirrors and each other. Applicant should submit evidence of working mirrors with particles and experimental results. This application is so theoretical as to definitely require evidence of a working device.

Furthermore dependent claim 6 recites that the two particles are photons whereas claim 2 recites that the particles can “absorb” one another. Photons are noninteracting particles, i.e. one photon cannot “absorb” another photon. This device doesn't work.

It is also not seen how the device works with holes (claim 9). There is no obvious experimental setup and no blueprint how to make one. Holes require semiconductor material and it is not seen how such apparatus will be made.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As above, the recitation of "interaction free measurement" is vague and indefinite and is not universally agreed upon as to what exactly constitutes such and there is no clear evidence that such is possible or even what such measurement is. See for example applicant's cited art on "interaction free measurement". Also, there is no clear blueprint of how to make the claimed invention and accordingly all the claims are considered vague and indefinite.

Finally, the patent office regards any measurement to require a definite quantum mechanical state, i.e. a collapse of the measured particle into a determinant quantum state. That is, there is no "interaction free measurement" as far as the USPTO is concerned. There is no "measurement" if there is no determination of quantum state. Semantics and philosophy should not be argued here. As far as the USPTO is concerned, regardless of semantics and philosophy, there is no enablement here unless applicant can prove a working device.

The nature of this theoretical quantum computing device is such that applicant must show every step, every material, every source of particles, every measurement device, every method and every material required to build and use this invention, or at least teach how one of ordinary skill would do so. This burden has not been met.

Reference to theoretical journal papers is not enabling here as they also do not show working devices to enable applicant's invention.


Ralph '732 is cited as relevant art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571-272-1730. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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JEROME JACKSON  
PRIMARY EXAMINER